

# Stp-H3-Vader

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# What is STP-H3 Vader

- Vader stands for Variable emissivity radiator Aerogel insulation blanket Dual zone thermal control Experiment suite for Responsive space
- It is testing a new thermal insulation multi layer blanket for space which is made from Aerogel so spacecrafts will be safe from the extreme weather in space.

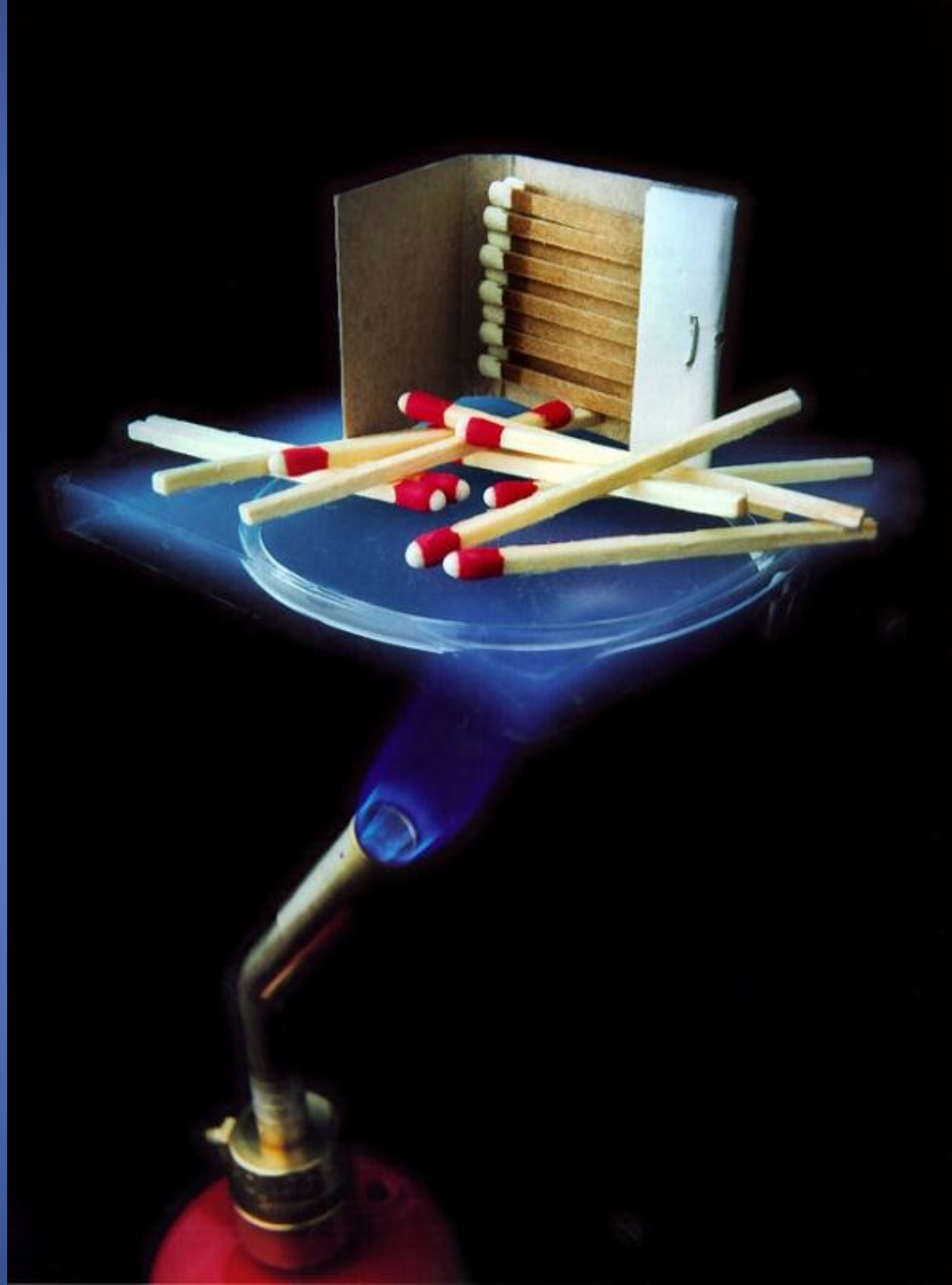
# STP-H3 Vader Mission

- It launched in March 2011.
- It is an experiment to see if the material in the blanket will hold up in space so later hopefully it could be used as astronaut suits in future Mars missions.





- Aerogel is made from alcogel which is wet gel and the liquid part of the alcogel is removed without damaging the solid part.
- Aerogel is made from 99.8% air, 0.2 % silicon dioxide.
- Silicon dioxide is found a lot in Earth's crust.
- Aerogel's melting point is 2,200 degrees Fahrenheit.
- It is light , but still strong, and it is made by removing the silicon dioxide and replacing it with air.
- Aerogel is the lowest density solid to exist.
- It is 1,000 times less dense than glass.
- There are 3 types of Aerogel:  
1. Silica 2. Carbon 3. Aluminum



# Thermal Blanket

- Thermal means *heat*
- *The multi-layer thermal blanket helps protect and keep the spacecraft warm from the extreme cold of space.*
- *The thermal blanket's outer layer heats up to about 215 degrees Fahrenheit.*
- *It successfully protects the on-board instruments against extreme temperatures even though the blanket is extremely thin, measuring less than one-tenth of an inch thick when laid flat.(0.254 centimeters) THAT'S THIN!!!!*



Thank You

The END!

